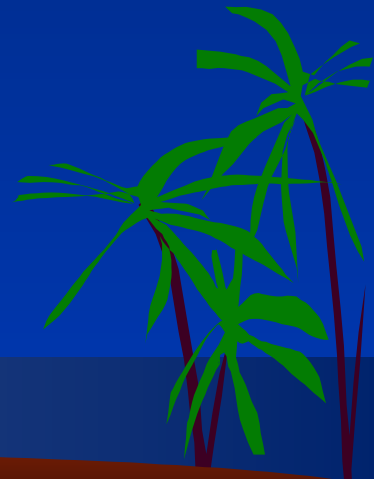
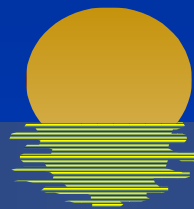


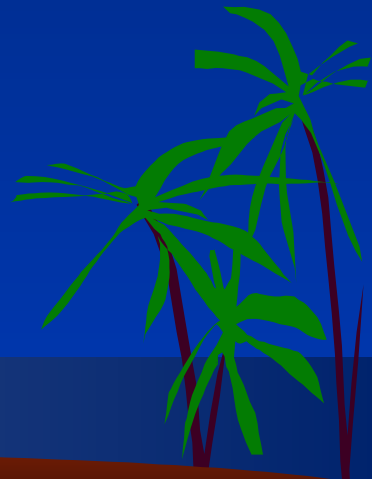
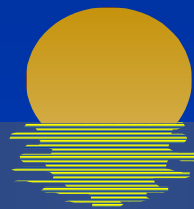
# HOT WEATHER INJURIES

CW5 DICK WILLIAMS



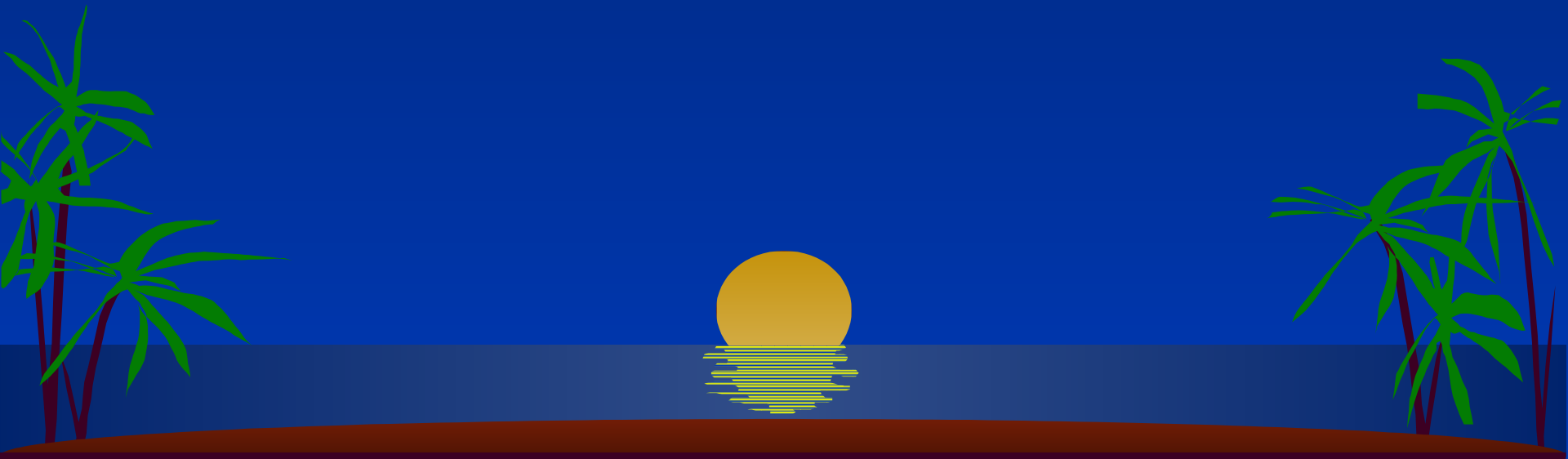
# HOT WEATHER INJURIES

- TYPES
- HEAT TRANSFER
- HIGH RISK PERSONNEL
- SALT REPLENISHMENT
- TOOLS FOR PREVENTION
- WATER PROCUREMENT
- WATER COLLECTION
- HAZARDS DURING SURVIVAL
- OTHER INJURIES

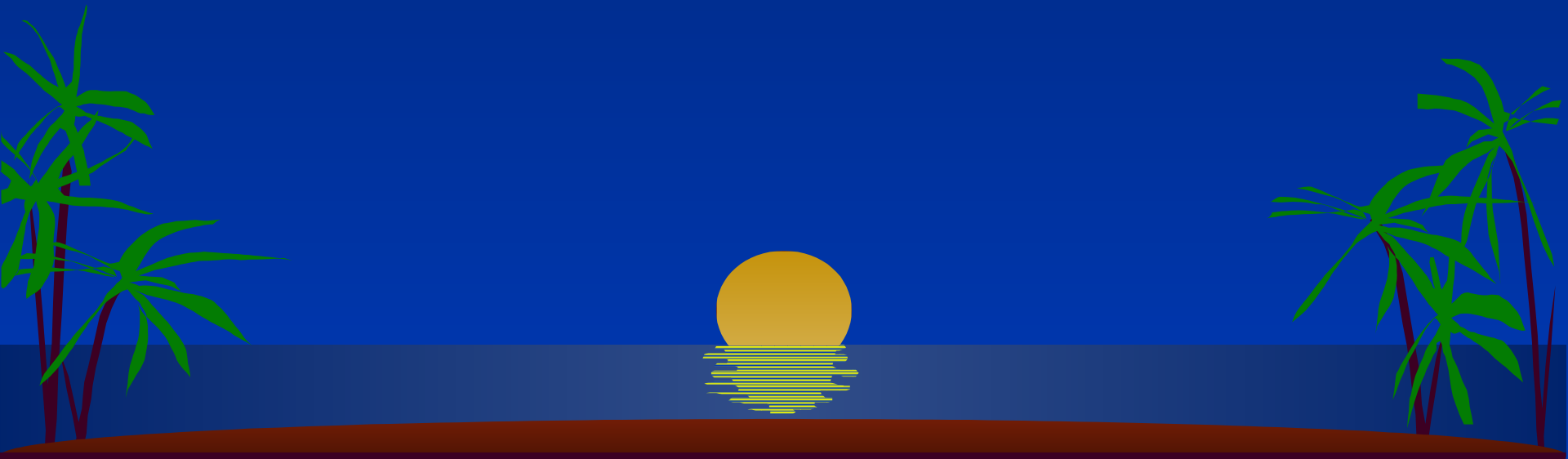


# Heat Injury Categories

- Heat Cramps
- Heat Exhaustion
- Heat Stroke

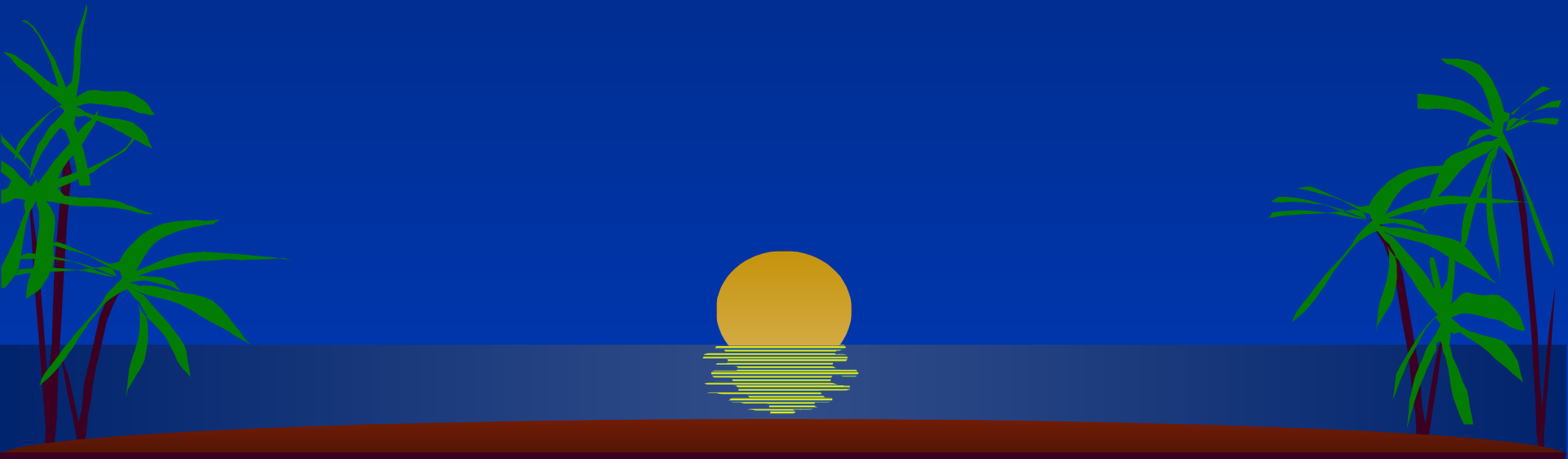


# HEAT CRAMP SYMPTOMS



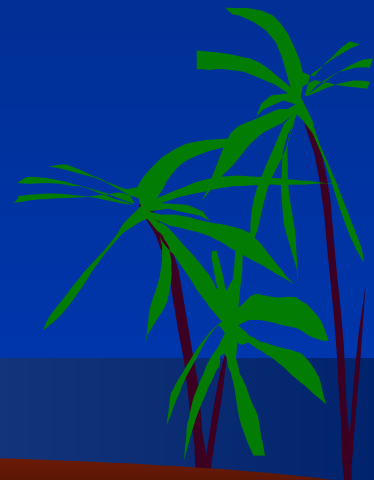
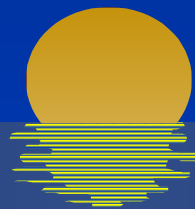
# HEAT CRAMPS

- Heavy Sweating
- Muscular cramps of the arms, legs, or abdomen
- Excessive thirst



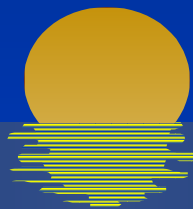
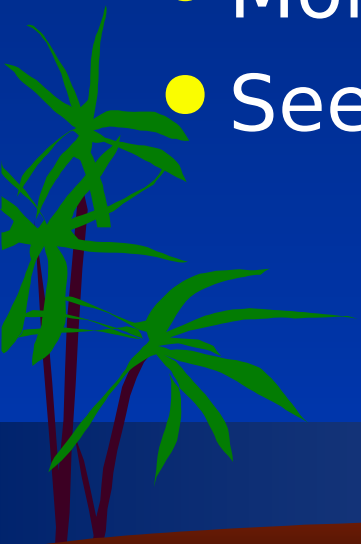
# HEAT CRAMPS

## FIRST AID



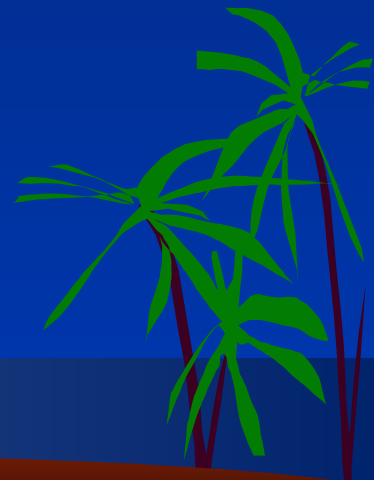
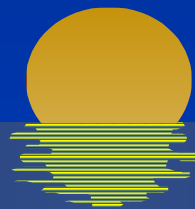
# HEAT CRAMPS

- Move casualty to shade or improvise shade
- Loosen clothing
- Give large amounts of water to drink
- Monitor and give water as tolerated
- Seek medical aid if symptoms persist



# HEAT EXHAUSTION

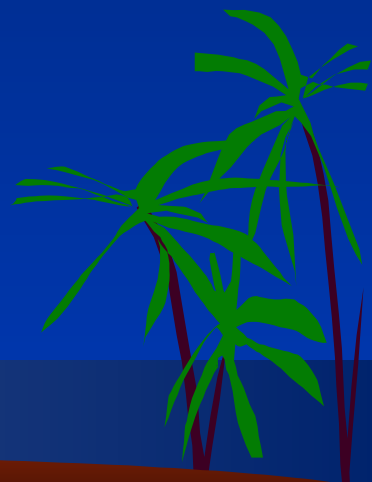
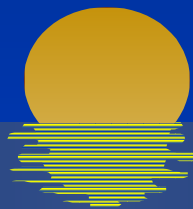
## SYMPTOMS





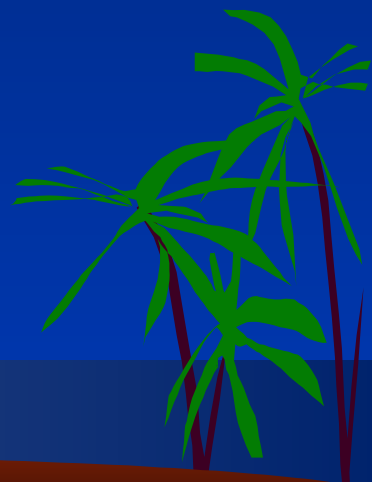
# HEAT EXHAUSTION

- Heavy sweating
- Pale, moist, cool skin
- Headache
- Weakness
- Dizziness
- Loss of appetite



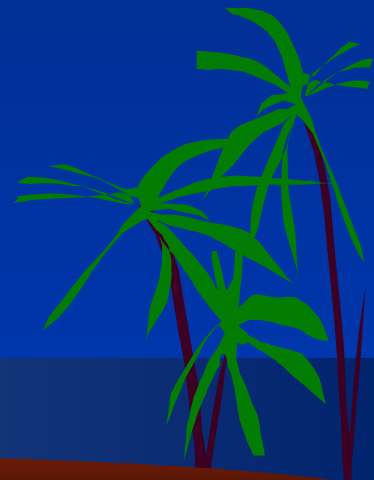
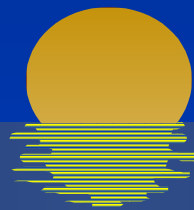
# Possible Symptoms

- Heat cramps
- Nausea
- Vomiting
- Urge to defecate
- Rapid breathing
- Confusion
- Tingling of hands and/or feet



# HEAT EXHAUSTION

## FIRST AID



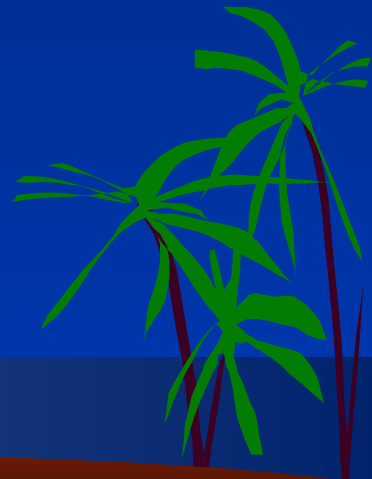
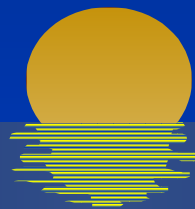
# HEAT EXHAUSTION

- Move casualty to shade or improvise shade
- Pour water on him and fan him to permit coolant effect of evaporation
- Give at least one canteen of cool water to drink
- Elevate the legs
- Seek medical aid if symptoms persist



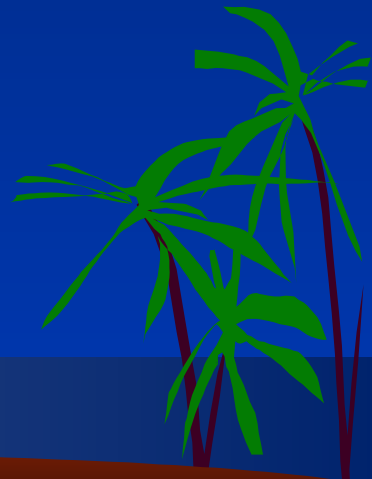
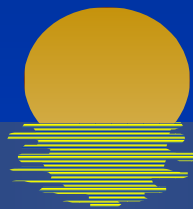
# HEAT STROKE

## SYMPTOMS



# HEAT STROKE

- Stoppage of sweating
- Hot, dry skin (flushed)
- Headache
- Dizziness
- Nausea
- Fast Pulse and respiration
- Seizures
- Mental confusion
- May collapse and become unconscious



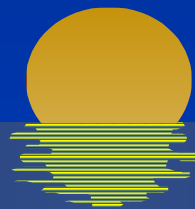
# HEAT STROKE

## FIRST AID



# HEAT STROKE

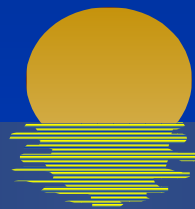
- THIS IS A MEDICAL EMERGENCY!
- EVAC as soon as possible
- Move casualty to shade or improvise shade
- Loosen or remove outer clothing
- Place casualty in cold water bath to lower temperature





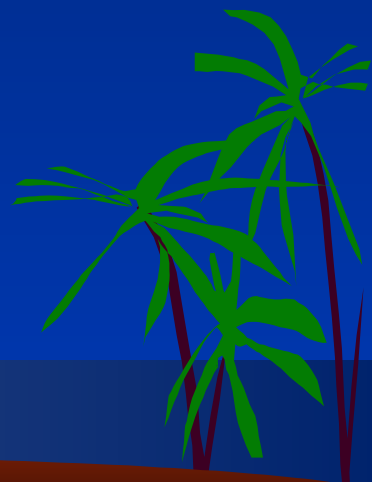
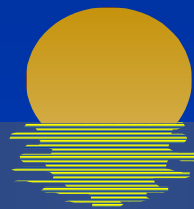
# HEAT STROKE

- Spray or pour water over casualty and fan him continuously
- Massage extremities
- Elevate his legs
- If conscious, Have him slowly drink at least one canteen of cool water
- Continue cooling measures during EVAC



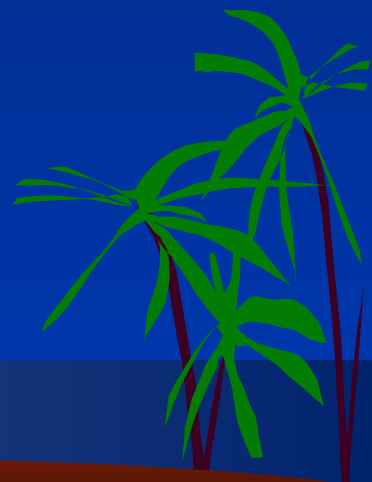
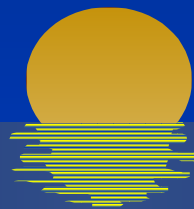
# HEAT TRANSFER

- Radiation
- Conduction
- Convection
- Evaporation



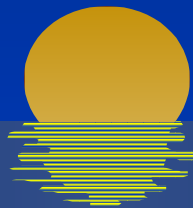
# RADIATION

- The transfer of heat from an object of intense heat to to an object of lower temperature by radiant energy



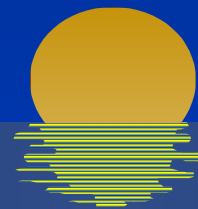
# CONDUCTION

- The transfer of heat from molecule to molecule of adjacent objects. The proximity of these objects will determine the overall rate of conduction



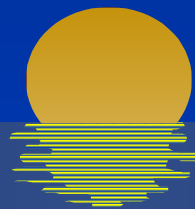
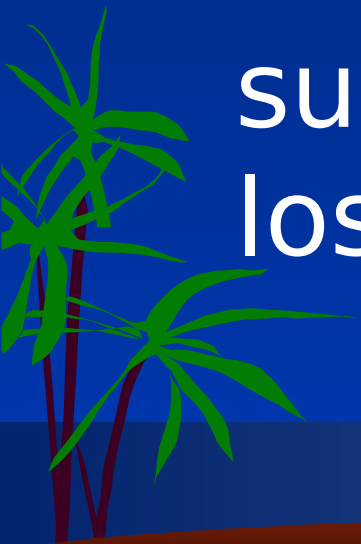
# CONVECTION

- The transfer of heat in liquids or gases in which molecules are free to move. During body heat loss, the body heats the surrounding air; the heated air expands and rises because it is displaced by cooler, denser air. Respiration is a form of convection.



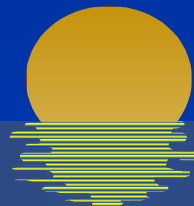
# EVAPORATION

- Involves the changing of a substance from its liquid state to its gaseous state. When water on the body's surface evaporates, heat is lost



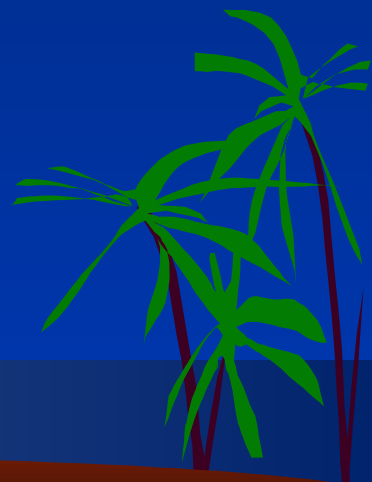
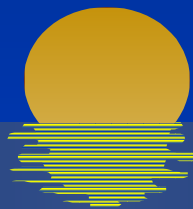
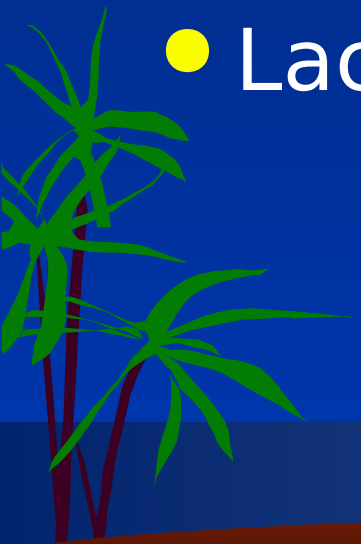
# HUMIDITY

- Severely limits evaporation
- 82' to 84' F Sweating begins
- 95' F Sweating takes over
- 115' F and 10% humidity - may function all day
- 115' F and 80% humidity - will be incapacitated in 30 minutes



# HIGH RISK PERSONNEL

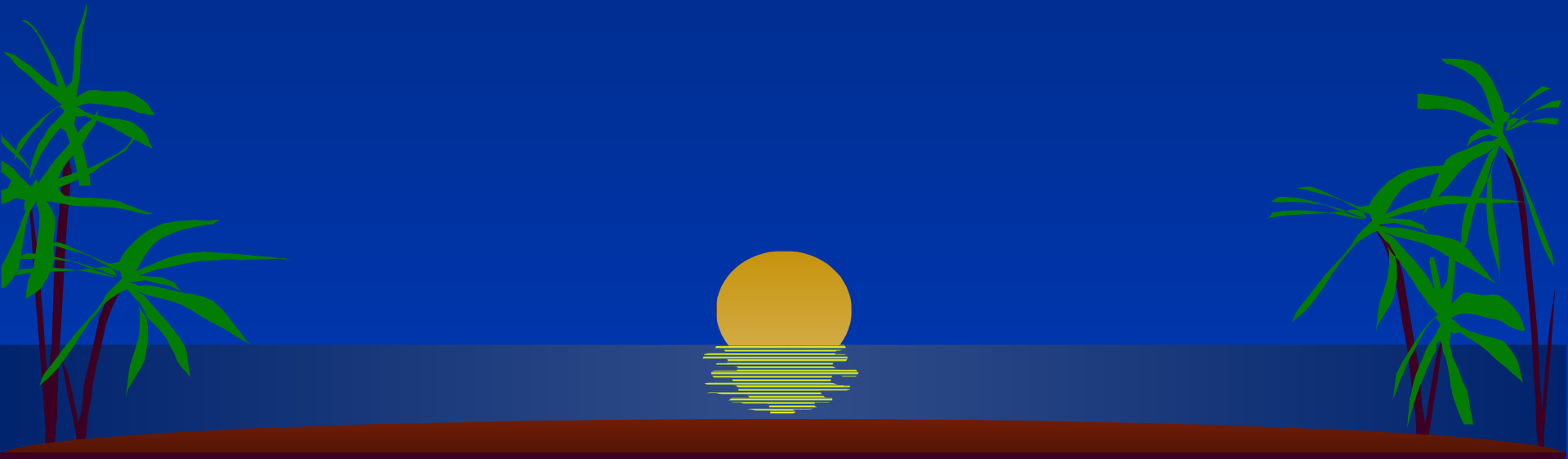
- Physical condition
- High intake of caffeine
- MOPP gear operations
- Acclimatization
- Lack of visible sweating





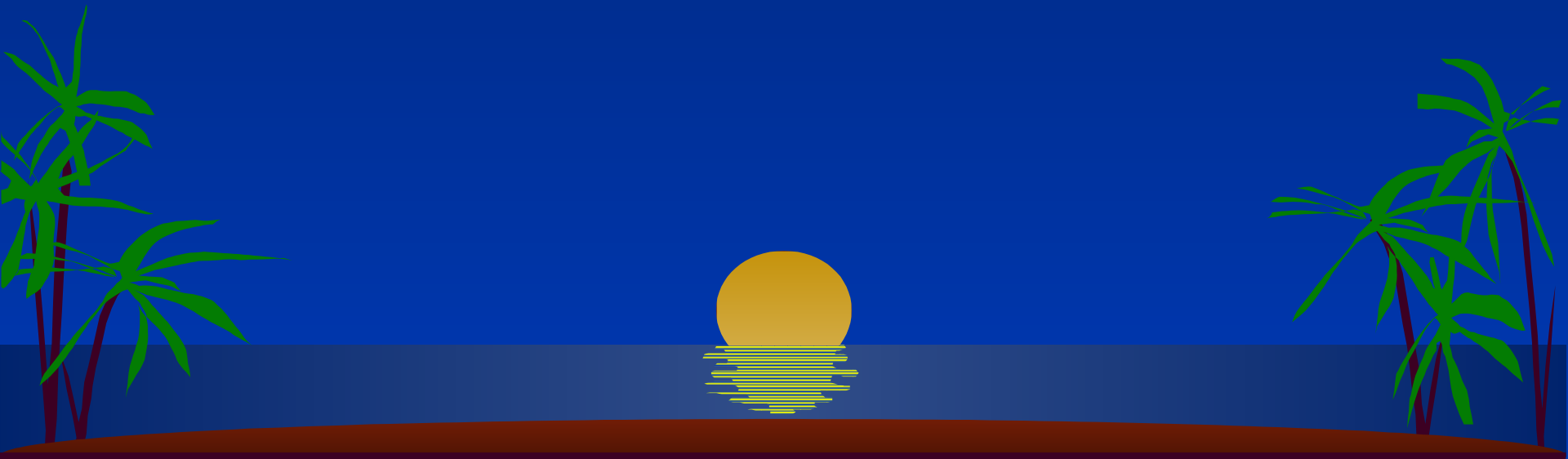
# SALT REPLENISHMENT

- MRE's
- Normal salting of meals
- Additional salting



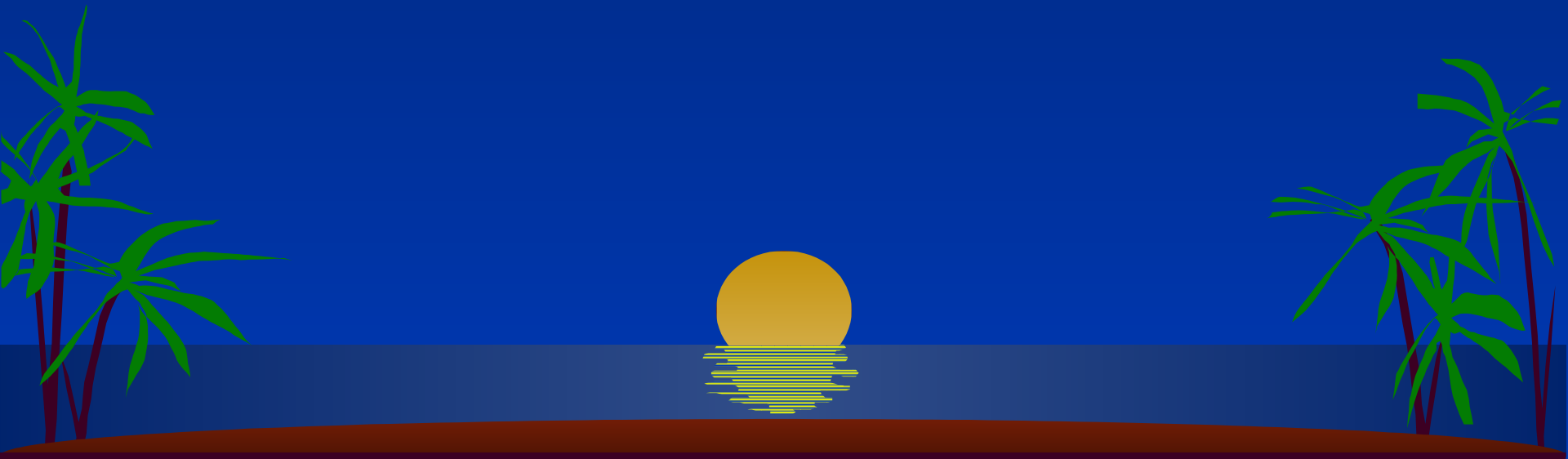
# TOOLS FOR PREVENTION

- Water containers
- Hot weather survival kits
- Water Bag and desalination kit



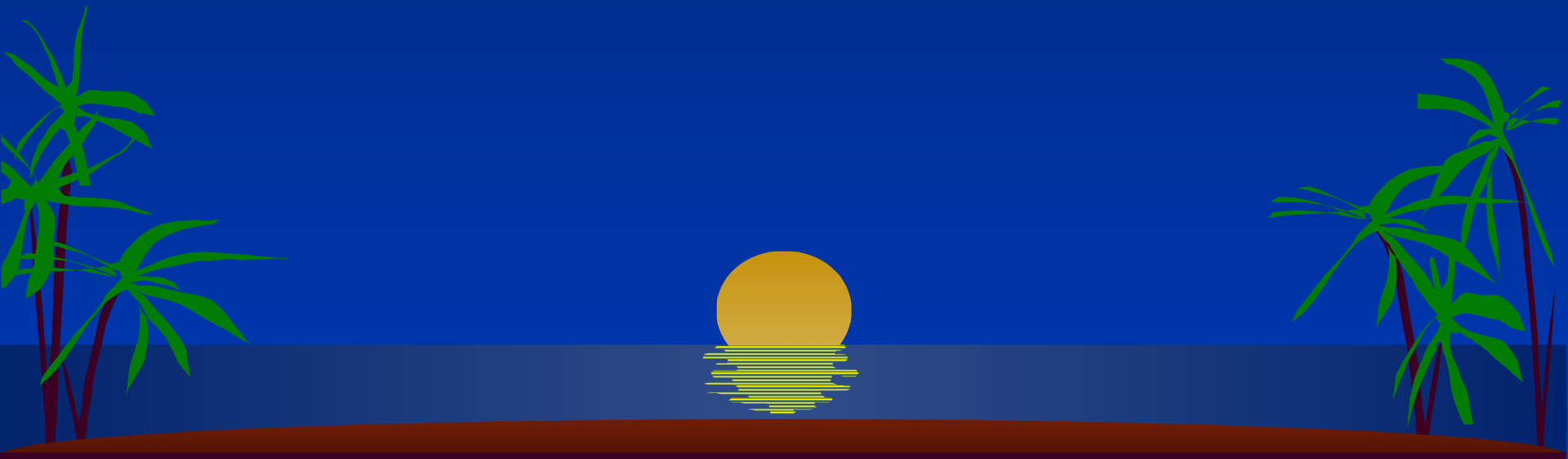
# WATER PROCUREMENT

- Frigid Areas
- Sea
- Beach
- Desert



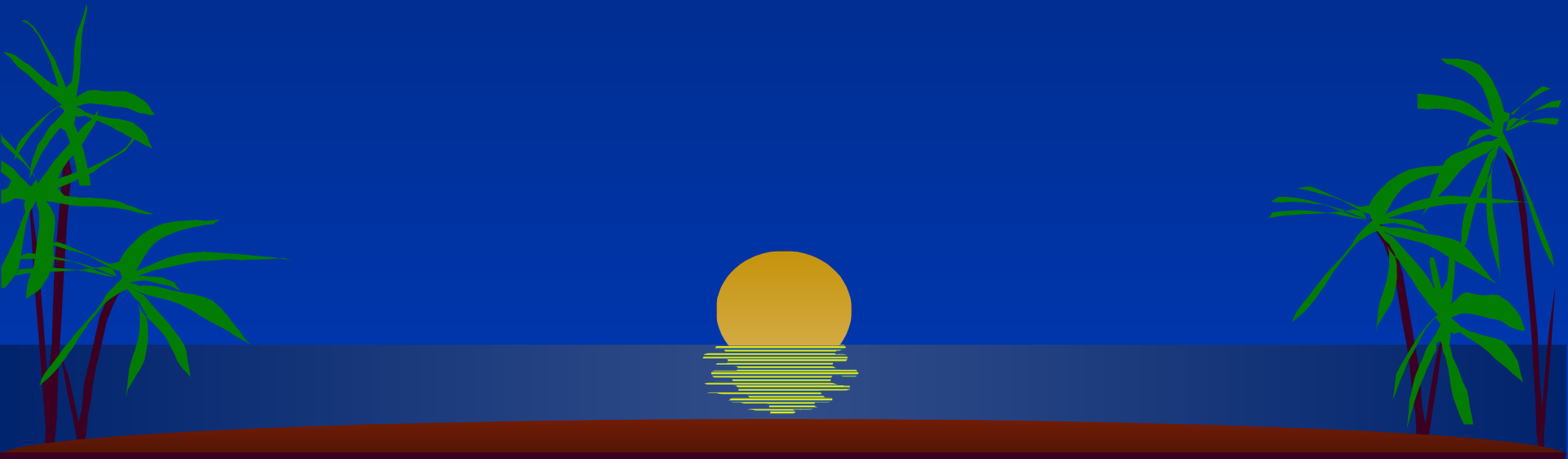
# FRIGID AREAS

- Snow and Ice
- Grayish colored Ice
- Bluish colored Ice



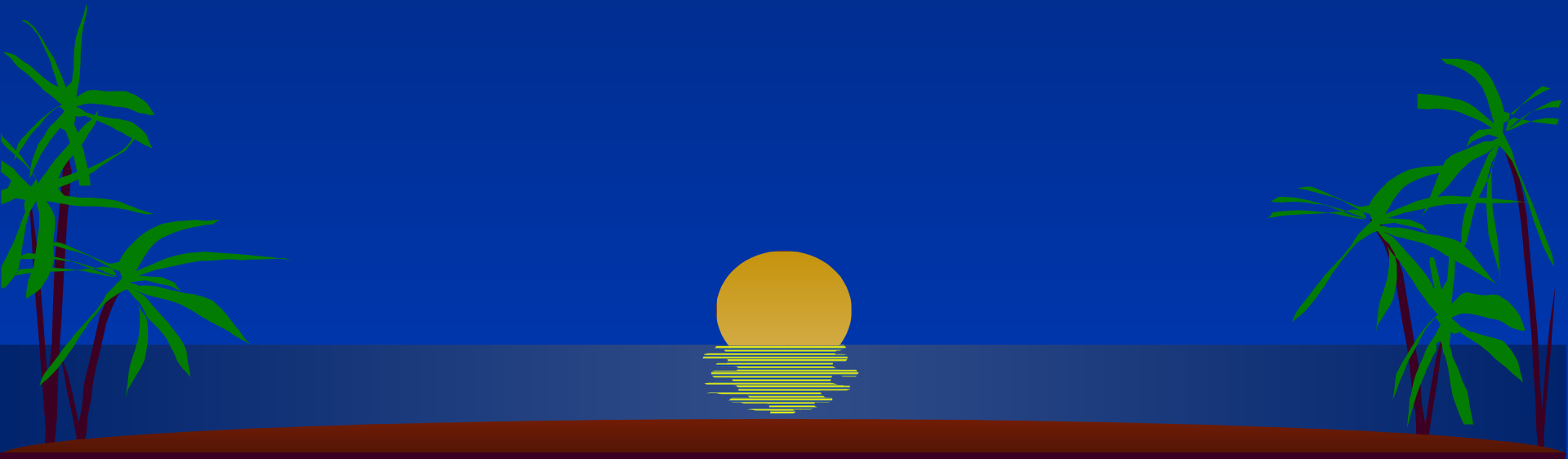
# Sea

- Never drink salt water without desalting it first.



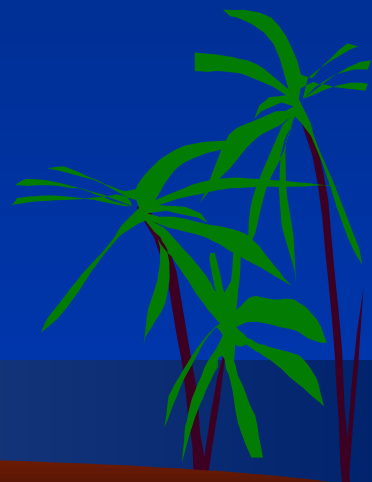
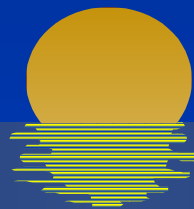
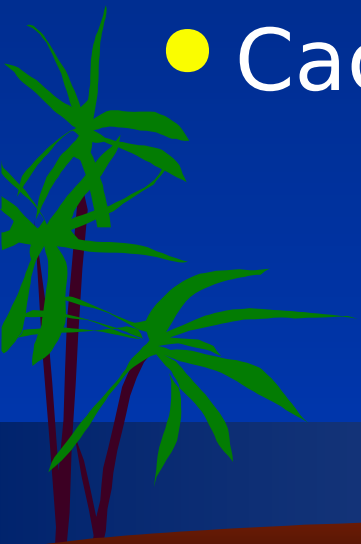
# Beach

- Fresh water ponds or lagoons
- Heat water and catch steam
- Improvise heating



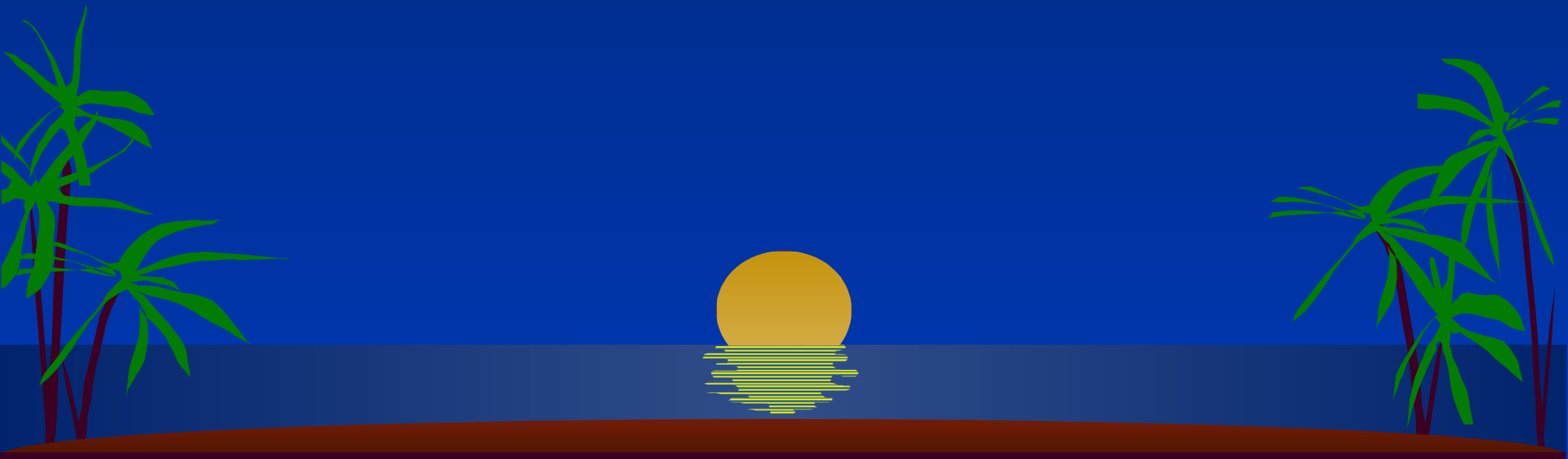
# Desert

- Dry lake beds
- Look for green vegetation
- Animal tracks
- Sand dunes
- Cacti



# WATER COLLECTION

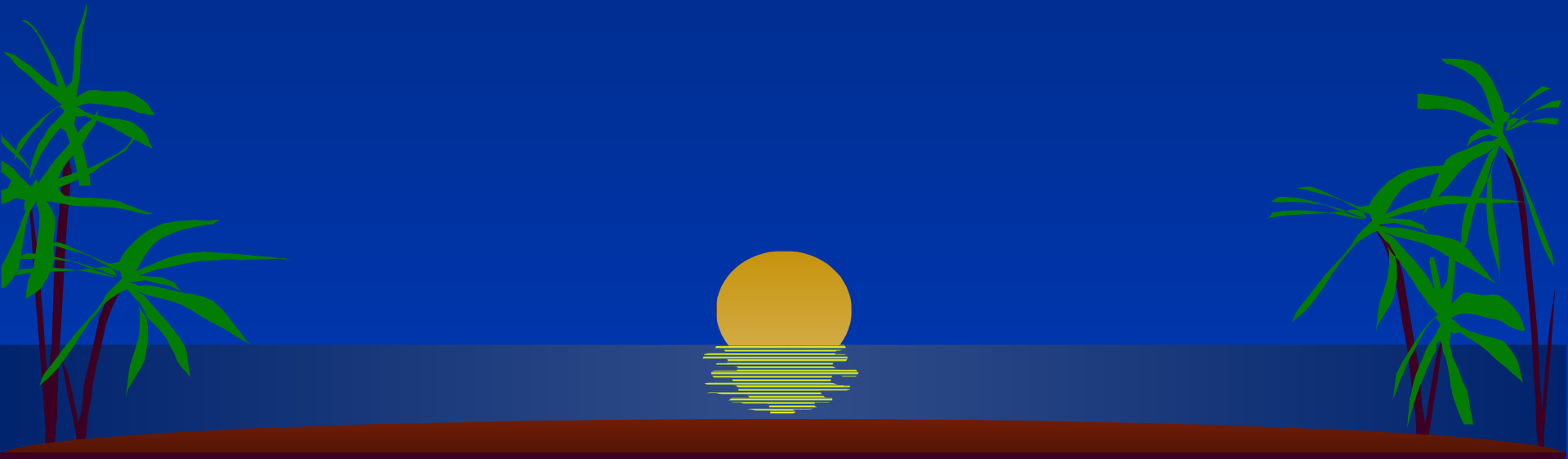
- Rocky areas
- Above ground solar still
- Below ground solar still
- Purifying water





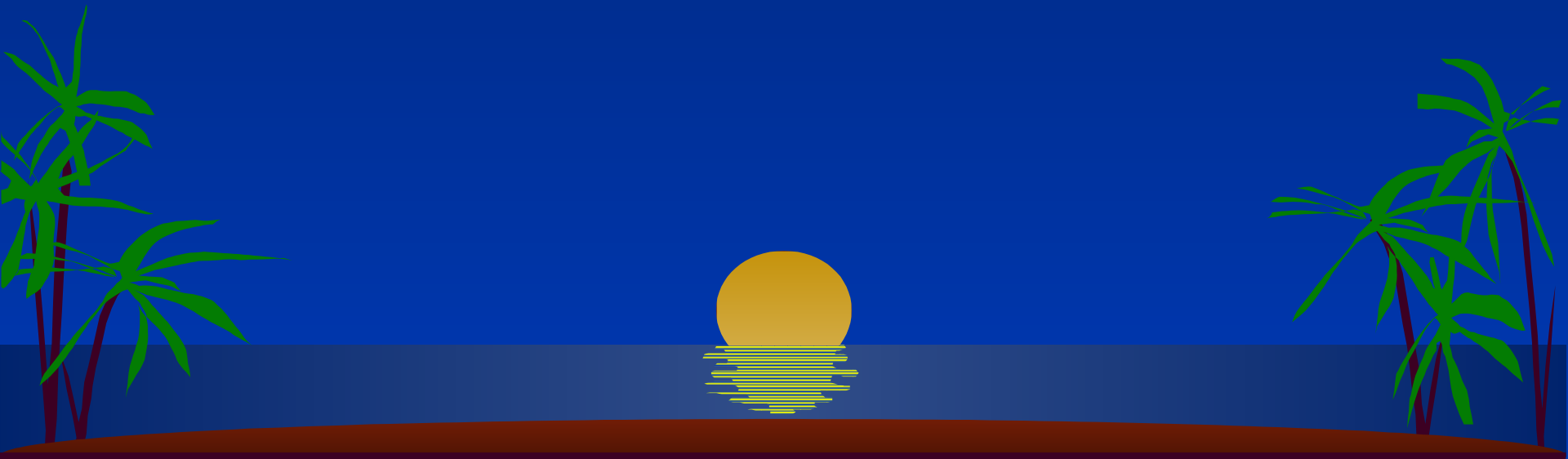
# HAZARDS DURING SURVIVAL

- Urine
- Blood
- Sea water
- Animals



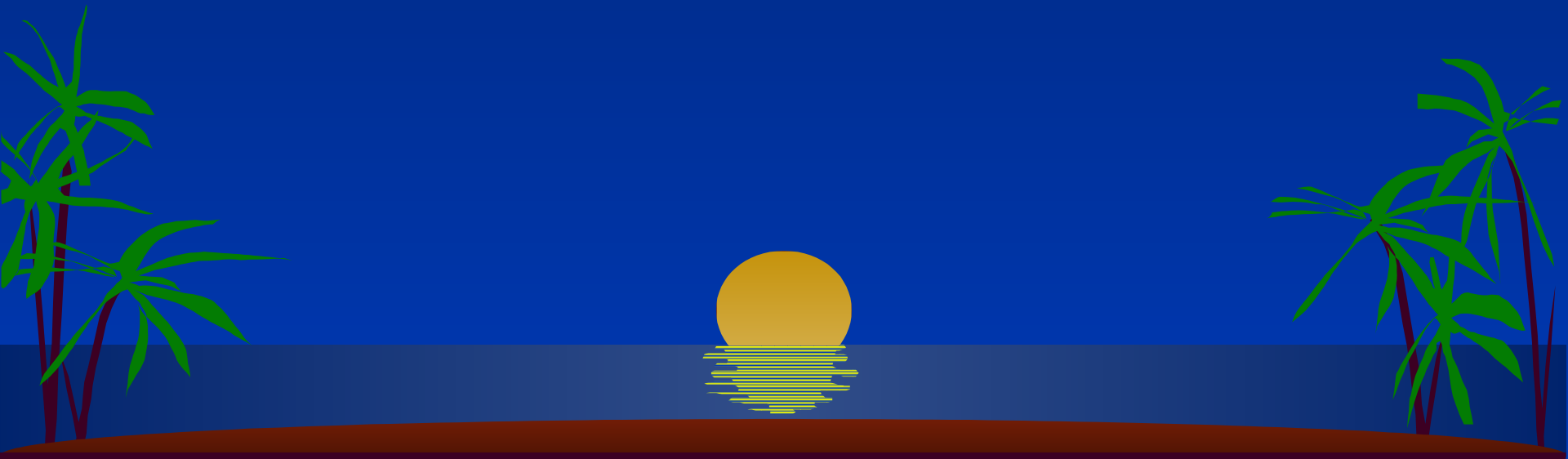
# OTHER INJURIES

- Sunburns



# REFERENCES

- FM 21-76 Survival
- FM 21-11 First Aid for Soldiers
- FM 1-301 Aeromedical Training for Flight Personnel



# QUESTIONS?

